

INAX Corporation

The Color of Quality Tile

World's Largest Tile Maker

INAX Corporation was founded in 1924 and is now Japan's leading manufacturer of tiling, building materials, sanitary fixtures, and residential fixtures. Particularly for tiles, INAX is the world's largest tile maker and distributes these products that play a variety of roles in our daily lives to customers throughout the world.

INAX has been using Konica Minolta Sensing's spectrophotometers for many years, and the replacement of previous products with the latest Spectrophotometer CM-700d provided the opportunity for this application note.

Color Comparison and Color Value Determination of Master Colors

For this report, a visit was paid to the General Technology Research Laboratory of INAX. In this laboratory, the master colors for each product are measured and compared to the design color samples created during the design stage. In addition, the Konica Minolta Spectrophotometer CM-700d is used to determine the colorimetric values of the master plate. In other words, the colorimetric values measured here become the standard values for the product colors.

Previously, a horizontal-format Spectrophotometer CM-2600d was used, but it was found that the vertical-

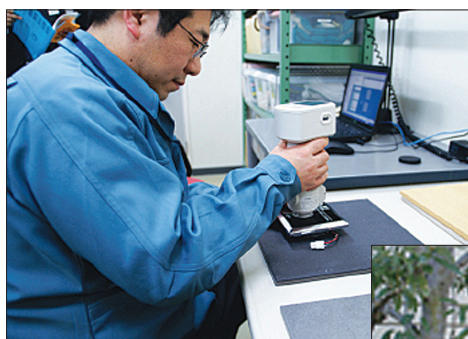
format CM-700d can provide more stable measurements of small but thick samples such as tiles. When using the CM-2600d, a spacer with the same



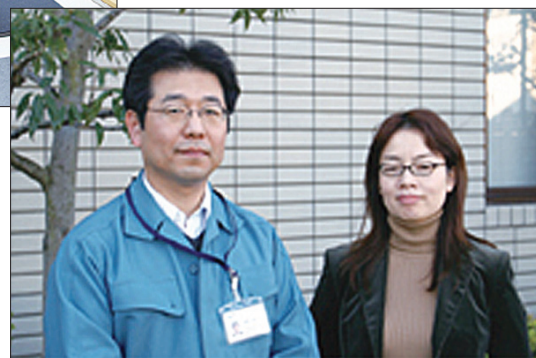

thickness as the tile was used to provide stability, but the CM-700d makes such a spacer unnecessary. In addition, the Bluetooth wireless communication feature of the CM-700d was highly appreciated since it eliminates cables that would get in the way and allows desk space to be used more efficiently.

Handling diverse applications

INAX Corp. manufactures a wide variety of products, and more than 1,000 kinds of products are measured at this laboratory alone.



Bluetooth transfers measured color data to PC



Mr. Niimi and Ms. Katoh of INAX Corporation

At the General Technical Research Laboratory, about 20 employees of the design department and the various divisions' research departments share the use of a CM-700d.

Although the main application is determining the color of product masters as described above, there are also other applications for color measurement, some of which are introduced below.

Vertical CM-700d
Horizontal CM-2600d



Universal Design for Toilet Control Panels

In order to make sure that elderly people or people with disabilities do not have problems operating the toilets in lavatories at public places such as train stations, parks, hospitals, department stores, etc. The shape, color, and layout of the buttons for washing, calling for assistance, etc. are defined by JIS (Japanese Industrial Standards).

Since the standards specify the color of the buttons on the control panel and that contrast with surrounding areas must be ensured, the CM-700d is used in the design and layout of such panels.



Control panel for public toilet

Luminance Comparison of Guidance Blocks for People with Impaired Vision

For walkway guidance blocks for people with impaired vision, the contrast between the guidance blocks and the surrounding walkway is specified or standardized by various regional governments and construction standards. This is done to ensure that people with impaired vision (low vision) can easily differentiate between the guidance blocks and surrounding areas. In the past, measurements using luminance meters* were specified, but that required the preparation of a special darkroom and light source to ensure uniform measurement conditions and involved much labor.



Guidance blocks



Guidance blocks

The measurement process was improved by using the CM-700d (which eliminates the need to prepare a special measurement environment) and determining the luminance value based on the measured Y value.

The luminance values of each block and tile is measured ahead of time and stored in a database, enabling data proving that the block or tile meets the regional specifications to be supplied at the time of delivery.

Luminance Measurement

Since a luminance meter takes non-contact measurements, it has the problem of being affected by the brightness of the surrounding area. On the other hand, it also provides measurements under the actual brightness environment so that evaluation close to visual evaluation can be obtained.



Luminance Meter LS-100

Although both luminance meters and spectrophotometers (color-measuring instruments) can be used for evaluation of guidance blocks, the instrument to be used should be selected according to the customer's purpose or application.

Color Control of Brand Mark

The color of the brand mark of INAX Corp. is a combination of Amenity Blue and black. The color of the brand mark is specified numerically in Munsell numbers and color control of the brand mark is performed using the CM-700d.

From the examples above, it is clear that INAX Corp. understands well the functions and performance of the CM-700d, and utilizes the CM-700d in a variety of ways that make full use of the instrument's features. We at Konica Minolta Sensing will continue our active after-sales support to contribute to even more effective use of our instruments by INAX Corp. and all of our customers.



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